



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/935,734	08/24/2001	Kanefumi Nakahara	213345US2CONT	9887
22850	7590	10/16/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			KIM, PETER B	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AVJ

<b>Office Action Summary</b>	<b>Application No.</b> 09/935,734	<b>Applicant(s)</b> NAKAHARA ET AL.	
	<b>Examiner</b> Peter B. Kim	<b>Art Unit</b> 2851	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 48-76,100-105 and 121-134 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 48-76,100-105 and 121-134 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 106-110 and 116-120 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 121 and 122 are rejected under 35 U.S.C. 102(a) as being anticipated by Tanitsu et al. (Tanitsu) (5,963,306).

Tanitsu discloses a lithography system comprising an exposure-apparatus main body in a chamber that can be provided on a floor surface and exposes a substrate; a beam generating unit that is arranged on said floor surface a predetermined distance apart from the chamber of the exposure-apparatus main body; and an optical connection unit connecting the main body and the beam generating unit wherein both main body and beam generating unit are constituted so that maintenance can be performed and the optical connection unit is arranged below the floor surface (Fig. 6, col. 1, lines 11-54, col. 7, line 47 – col. 9, line 67).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2851

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 48-51, 53, 73, 76, 100, 123, and 125-127 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (Kimura) (6,439,822).

Kimura discloses a lithography system used in a clean room comprising: an exposure apparatus (200) that is provided on a floor surface of said clean room (col. 7, line 65 – col. 8, line 10) and transfers a pattern of a mask onto a substrate through a projection optical system; a substrate-processing unit (100) that is arranged on the front side of said exposure apparatus on said floor surface and is connected in-line with said exposure apparatus, said front side being seen in a longitudinal direction of said exposure apparatus; and a first ceiling-transport system (51) that moves along a first rail extending in a predetermined direction on a ceiling of said clean room. Kimura also discloses a orientation-setting mechanism (Fig. 4) on the ceiling transport. Although Kimura discloses the ceiling transport system carrying substrate instead of mask, it would have been obvious to one of ordinary skill in the art to provide a transport to carry the mask for the invention of Kimura because masks are also necessary for projection exposure. Although Kimura does not disclose delivery port between an optical axis of said projection optical system and substrate-processing unit, Kimura discloses the port (4) on the side of the processing unit away from the projection optical system because the substrate of Kimura requires some processing before it is exposed. Therefore, it would have been obvious to one of ordinary skill in the art to locate the port for mask between the processing unit and the projection optical system since unlike the substrate, the mask does not require the pre-exposure processing, and the port for mask can be located closer to the projection optical system.

Claims 52, 74, 75, 101-105 and 124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (Kimura) as applied to claims 48 and 123 above, and further in view of Bonora et al. (Bonora) (6,364,595).

The further difference between the claimed invention and the modified Kimura is the sealed type container having a lid that can be opened and closed. Bonora discloses in col. 4, lines 55-67, a sealed type container. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further modify Kimura with the sealed-type container to protect the substrate and mask from the environment.

Claims 54-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (Kimura) as applied to claim 48 above, and further in view of Fujima (J 09266146).

The further difference between the claimed invention and the modified Kimura is an inline interface portion. Fujima discloses an inline-interface portion (14) between the main body and the substrate processing (15). Although Fujima does not explicitly disclose that the interface portion is detachable because the interface portion and the slider (7) are separate structure, the interface portion is likely detachable. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the interface portion of Fujima to the invention of the Kimura because the interface portion facilitates delivery of the wafer from the main body to the processing unit.

Claims 71 and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (Kimura) as applied to claim 48 above, and further in view of Arakawa (6,356,338).

The further difference between the claimed invention and the modified Kimura is a laser unit connected to an end surface of the exposure apparatus reverse to the front surface to which the substrate-processing unit is connected. Arakawa discloses in Fig. 1, the laser unit and the illumination optical system (5) located at an end surface of the exposure apparatus reverse to the processing unit (40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to further modify Kumura by providing the laser and illumination optical system at the an end surface reverse to the processing unit as taught by Arakawa in order to prevent the exposure apparatus from becoming contaminated as disclosed by Arakawa in col. 1, line 29 - col. 2, line 4.

Claims 128-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura et al. (Kimura) in view of Bonora et al. (Bonora).

Kimura discloses a lithography system used in a clean room comprising: an exposure apparatus (200) that is provided on a floor surface of said clean room (col. 7, line 65 – col. 8, line 10) and transfers a pattern of a mask onto a substrate through a projection optical system; a substrate-processing unit (100) that is arranged on the front side of said exposure apparatus on said floor surface and is connected in-line with said exposure apparatus, said front side being seen in a longitudinal direction of said exposure apparatus; and a first ceiling-transport system (51) that moves along a first rail extending in a predetermined direction on a ceiling of said clean room. Kimura also discloses a orientation-setting mechanism (Fig. 4) on the ceiling transport. However, Kimura does not disclose the sealed type container having a lid that can be opened and closed. Bonora discloses in col. 4, lines 55-67, a sealed type container. Therefore, it

would have been obvious to one of ordinary skill in the art at the time of invention to further modify Kimura with the sealed-type container to protect the substrate and mask from the environment.

***Response to Arguments***

Due to the new ground of rejection, the current action is made non-final.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Kim whose telephone number is (703) 305-0105. The examiner can normally be reached on Monday-Thursday from 8:30 AM to 6:00 PM. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703 308 2847. The fax phone numbers for the organization where this application or proceeding is assigned is 703 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 306- 3431.



Peter B. Kim  
Patent Examiner  
October 2, 2003